UNIVERSITY OF ALGARVE

FACULTY OF ECONOMICS

BIRDWATCHER PROFILE IN THE RIA FORMOSA NATURAL PARK

ANDREIA SOFIA CORREIA DA COSTA

Dissertation

Master in Tourism Economics and Regional Development

Work made under the supervision of:

Prof. Pedro Miguel Guerreiro Patolea Pintassilgo

Prof. António Jorge Peres Matias

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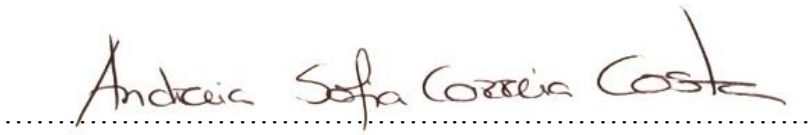
Work Authorship Declaration

I declare to be the author of this work, which is unique and unprecedented. Authors and works consulted are properly cited in the text and are in the listing of references included.

Andreia Sofia Correia da Costa



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ACKOWLEGMENTS

Over the eight months I developed this dissertation, I had the opportunity to count with the support of several people, which directly or indirectly, contributed for this dissertation.

Therefore, I first would like to thank my supervisors, Pedro Pintassilgo and António Matias who helped me with all my doubts and whose feedbacks were very important for the final result of this study. Their support and availability were vital for me to carry on.

Then I need to thank my team mates and friends at the Wildlife Rehabilitation Centre (RIAS), located in "Quinta de Marim". All of them played an important role on this challenge of doing a dissertation while working full-time.

I also want to thank:

- Joost Valkenburg and Silvia Daniel who translated the questionnaires to Dutch and to Spanish perfectly;

- Thijs Valkenburg who helped me with technical issues of birdwatching and applied some surveys;

- Maria Casero, Sara Machado and Fábia Azevedo who applied some questionnaires when I could not be present;

- Mafalda Costa for the grammatical review;

- Lídia Nicolau for the help with the SPSS statistical package.

At last, this work was only possible with the sympathy of all of the 203 respondents who gave a little of their time to answer the survey.

ABSTRACT

Birdwatching is a growing tourism sector worldwide. In the Algarve the potential for birdwatching activities is widely recognized, in particular in the Ria Formosa Natural Park (RFNP). This study aims to describe birdwatchers profile in RFNP and for that a survey was applied in "Quinta de Marim". Regarding socio-economic characteristics of birdwatchers, the survey results show that the most important nationalities are: British (39%), Dutch (17%) and Portuguese (17%). The majority of birdwatchers are male (55%) and married (51%). The average age is 50 years old. They are highly educated (74% have an academic degree). Concerning profession, the most frequent answer was retired (41%). The study also analyses the willingness to pay to improve the overall conditions of the activity in "Quinta de Marim". The results show that 92% of the birdwatchers would be willing to pay an entrance fee to fund birdwatching facilities at the location. On average they are willing to pay 4.29€. The environmental awareness of the respondents was examined using the New Environmental Paradigm scale. The results show a high environmental consciousness. Respondents are committed to the activity as they have knowledge about birds (86%), possess special equipment (70%) and do it when in vacations (85%). Moreover, it was found that there is a relationship between the nationality of the birdwatcher and the amount he is willing to pay to fund birdwatching facilities. There is also a relationship between nationality and the practice of birdwatching in other places in the Algarve. This research contributes to a better knowledge of the birdwatcher profile in the RFNP and therefore it can be used by policy-makers to enhance birdwatching tourism in the region.

Key-words: Birdwatching, Birdwatcher profile, Environmental awareness, Ria Formosa, Algarve

RESUMO

A observação de aves está em forte expansão no turismo, sendo um dos setores que mais tem crescido no segmento do Ecoturismo. No Algarve têm sido realizados vários estudos sobre as potencialidades da região para a prática da observação de aves. O Parque Natural da Ria Formosa (PNRF) é destacado como sendo um local privilegiado para essa prática. Esta dissertação pretende ajudar a compreender a caracterização dos visitantes de observação de aves no PNRF. A descrição do perfil deste tipo de visitante é feita com o recurso à aplicação de questionários na Quinta de Marim, um *hotspot* para a observação de aves no parque. Procura-se conhecer as razões porque visitam o PNRF, o seu nível de satisfação com a experiência, características socioeconómicas, as suas práticas de observação de aves e a sua consciência ambiental. Juntamente com esta caracterização, o estudo investiga a predisposição do turista de observação de aves para pagar uma taxa que seria utilizada para melhorar as condições para a prática da actividade na Quinta de Marim.

Um questionário foi aplicado a 203 turistas praticantes de observação de aves (dos quais 185 foram considerados válidos) no interior do percurso da Quinta de Marim, durante os meses de Novembro de 2014 e Fevereiro, Março e Abril de 2015. O questionário foi composto por 33 questões divididas por quatro grupos: observação de aves no PNRF; experiência em observação de aves; consciência ambiental; e caracterização socioeconómica. O primeiro grupo de questões focou-se na relação do turista com a PNRF, incluindo uma questão sobre a predisposição para pagar uma taxa tendo em vista a melhoria das condições para a observação de aves na Quinta de Marim. O segundo grupo questionou sobre os hábitos relacionados com a observação de aves. No terceiro grupo foi aplicado o Novo Paradigma Ambiental para conhecer a consciência ambiental dos inquiridos. Por último, foram colocadas questões relacionadas com o perfil socioeconómico. A aplicação deste questionário permitiu a definição do perfil dos turistas de observação de aves do PNRF como sendo indivíduos casados (51%), sem filhos (46%) e reformados (41%). Apresentam um nível de educação superior (74%), uma idade média de 50 anos e um rendimento mensal mediano de 1640€. Os homens (55%) estão ligeiramente melhor representados do que as mulheres. Relativamente às nacionalidades, as mais bem representadas são a inglesa (39%), a holandesa (17%) e a portuguesa (17%). A satisfação com a experiência de observação de aves no parque é no

geral positiva. A maioria dos visitantes ficou satisfeita ou muito satisfeita com a experiência (88%) e mais do que 32% dos visitantes estrangeiros afirma já ter visitado o local anteriormente. Cerca de 99% recomendaria o local a familiares e amigos e 80% demonstrou intenção em voltar. Em média o turista de observação de aves permanece na região por 14 dias. Uma grande maioria afirma já ter visitado ou pretender visitar outros locais do PNRF para a prática da observação de aves (62%), o que demonstra a potencialidade do local para atrair estes turistas. Relativamente à possibilidade de pagar uma taxa para melhorar as infra-estruturas para a prática de observação de aves na Quinta de Marim, 92% afirma que o faria. Em média, a totalidade dos indivíduos inquiridos estaria disposto a pagar 4,29€.

No que respeita à experiência em observação de aves, 86% considera ter um conhecimento sobre aves igual ou superior à média, 70% possuem equipamento específico, 56% pratica a modalidade até 30 dias por ano e 85% afirma fazê-lo quando viaja em férias.

Este estudo avalia também a consciência ambiental dos observadores de aves. Os resultados demonstram que a média global do Novo Paradigma Ambiental é de 4,22, o que indica que o visitante de observação de aves do PNRF tem uma forte consciência ambiental.

Foi igualmente testado se a nacionalidade está relacionada com outras características do perfil do observador de aves. Testou-se a relação da nacionalidade com o número de dias de observação de aves por ano e com a disponibilidade para pagar uma taxa com vista à melhoria das condições para a prática de observação de aves. Relacionou-se ainda a nacionalidade com a visita a outros locais no Algarve para a prática da modalidade. Verificou-se que não há relação entre o número de dias dedicados à prática da observação de aves e a nacionalidade dos praticantes. No entanto, verifica-se que a nacionalidade influencia o valor que estão dispostos a pagar. Conclui-se que os ingleses estão dispostos a pagar mais por esta taxa do que os visitantes de outras nacionalidades. A nacionalidade também está relacionada com o facto de visitarem outros locais da região para a prática da observação de aves. Cerca de 90% dos portugueses já visitou ou pretende visitar outros locais no Algarve (para além da Quinta de Marim) para observar aves. Entre os visitantes estrangeiros os britânicos são os que mais o fazem (63%).

Este estudo pretende contribuir para aumentar o conhecimento sobre o perfil do visitante de observação de aves do PNRF e pode ser usado pelas entidades responsáveis para melhorar as condições para a prática deste tipo de turismo na região.

GENERAL INDEX

Page

FIGURES INDEX

TABLES INDEX

GRAPHIC INDEX

ABREVIATIONS LIST

ERTA	Regional Tourism Identity of Algarve
NEP	New Ecological Paradigm
PNRF	Parque Natural da Ria Formosa
RFNP	Ria Formosa Natural Park
UK	United Kingdom
USA	United States of America

CHAPTER 1. INTRODUCTION

A shift in tourist behaviour has been noticed in the last years. There is a higher demand for landscapes and to watch wildlife, as the urbanized population lack contact with nature (Curtin, 2013). Therefore when it comes to decide how and where to spend free time, there is an increasing preference for nature activities and locations. In consequence nature[1] and wildlife[2] tourism have been growing around the world. This growth was higher in the last twenty years, as the interest in ecotourism activities played an important role (Tisdell & Wilson, 2004). Included in ecotourism activities, birdwatching is gaining importance as a segment of tourism and recreation markets and it is one of the fastest growing sectors of ecotourism (Czajkowski *et al.* 2014). Curtin (2013) described several hypotheses to justify the rapid growth of ecotourism, like the awareness for nature conservation, the new tourist behavior that looks for experiences and more active tourism, along with the need to reconnect with nature. However not all wildlife activities have been growing. While birdwatching is gaining popularity, hunting and other traditional outdoor activities have been declining (Hill, Cable & Scott, 2010; Jr, Stoll & Ditton, 2004).

If we analyse the numbers of the birdwatching market in the world we come across with estimations that point out the existence of around 100 million birdwatchers. In the USA, which is one of the biggest markets of birdwatching, the number of birdwatchers in 2006 was about 47.7 million adults (around 21% of the population), while the economics benefits of the activity (direct and indirect) ascended to over $85 billion (Moore, Scott & Moore, 2008). In Europe, the United Kingdom is the biggest market with 2.4 million birdwatchers (Ministro & Miguel, 2009). Birdwatching is also gaining importance in Mediterranean countries such as Spain, Italy and Portugal (Turismo do Algarve, 2012).

Birdwatching is currently a very dynamic tourism activity. In particular, it is starting to be explored in places where it is still underdeveloped but that have good natural resources (Czajkowski, *et al.* 2014). Additionally, the rapid growth of this activity

1 Nature Tourism is characterized as the experience of flora and fauna in natural settings and it is often used synonymously with ecotourism (Jafari, 2003: 410). In the context of this dissertation nature tourism and ecotourism are used as synonymous.

2 Wildlife Tourism experience is the encounter between the visitor and the wildlife. It can take place in natural or artificial environments (Cong *et al.*, 2014). This concept is further explained in section 2.1 Birdwatchers of this dissertation.

makes it more important for the stakeholders of the industry to understand in which way tourists interact with the surrounding environment (Moore, Scott & Moore, 2008).

This study is about birdwatching in a particular protected area at the coast of the Algarve. Ria Formosa Natural Park was chosen because it is characterized by a wetland very rich in biodiversity and wildlife. It is already attracting tourists to do birdwatching, but it has not, yet, an integrated offer (Ministro & Miguel, 2009). Some studies have been made about the potential of the Algarve for birdwatching and as a result some materials were produced, like birdwatching guides and flyers, where RFNP was highlighted as one of the best hotspots. This demonstrates tourism organizations recognize that the RFNP is capable to attract birdwatchers. However, there is not must research done about birdwatching in the area. Most studies done at this location are about marine sciences and biology and very few focus on the economic importance of activities in the area, like tourism.

This master dissertation aims to describe birdwatchers profile (including tourists and excursionists[3]) in the RFNP. In particular, it intends to identify the reasons why birdwatchers come to this specific location, their satisfaction level, willingness to pay a fee to improve birdwatching conditions, attitudes towards environmental conservation, birdwatching background and socio-economic characteristics. To achieve that knowledge a survey was conducted at "Quinta de Marim" – a pedestrian trail where all the habitats present in the park are represented, which in statistical terms can be regarded as a cluster.

To understand the relation of the visitor with the site, the survey asks about how many times he has been there, with whom, for how long, and the main reason for the visit. The birdwatcher is also asked about his satisfaction level, his intention to return and if he would recommend "Quinta de Marim" to friends and family. Another central question is if birdwatchers are willing to pay to improve overall birdwatching conditions at "Quinta de Marim". Because it is a natural area with several protection status it is also important to understand the environmental awareness of the visitors. Furthermore, the birdwatching background is analysed, such as if the respondents do birdwatching regularly and if they possess any special equipment. Not less important is to analyse which nationalities are more relevant, if birdwatchers at this site are mainly

3 According to Encyclopedia of Tourism (pp. 62) tourists are overnight visitors and excursionists are same-day visitors.

men or women, which age groups are more represented and what is their educational qualification and income. Moreover, three hypotheses are tested to comprehend if nationality is related with other characteristics of birdwatchers profile. The hypotheses are:

1. The number of days of birdwatching per year has the same distribution within the different nationalities.
2. The amount birdwatchers are willing to pay for improvements in birdwatching conditions has the same distribution within the different nationalities.
3. The practice of birdwatching in other places of the Algarve is independent of nationality.

Hence the study aims to contribute to a better knowledge of the birdwatcher profile in the RFNP. This is important as by understanding what birdwatching visitors want to see and do, policy-makers can be able to improve the quality of the experience (Green & Jones, 2010).

This dissertation is composed by six chapters. The first chapter is the introduction which aims to contextualize the study. The second chapter presents a literature review. It holds the concepts of birdwatching, birdwatcher, birdwatching in the RFNP and environmental awareness – New Environmental Paradigm Scale (NEP). The methodology is discussed in the third chapter. It explains the chosen approach to achieve the research goals, including descriptions of the study area, the survey and the data analysis method. The results are presented in the fourth chapter. Findings about the birdwatcher profile in the RFNP are listed there. Then the results are discussed in chapter five. Finally, the last chapter presents the main conclusions.

CHAPTER 2. LITERATURE REVIEW

This chapter reviews some central concepts that are important for the study and it is structured into four sections. The first one presents the definition of birdwatching considering the history of the activity, its importance and its consequences (both positive and negative) to the area where it is practiced. Then, the second section explores the concept of birdwatcher and his characteristics. The third section introduces the Algarve as a tourism destination with potential to attract birdwatchers and analyses more deeply the RFNP regarding its richness in birds' biodiversity. The fourth and last section, focus on environmental awareness highlighting the New Ecological Paradigm Scale.

2.1 Birdwatching

Birdwatching is included in the wildlife tourism which is defined as an activity where tourists have the opportunity to observe or interact with wildlife (animals, plants and habitats) that might be endangered, threatened or rare (Ballantyne, Packer & Hughes, 2009).

According to Reynolds and Braithwaite (2001), within the wildlife tourism products there are seven categories where most activities can be placed: (1) Nature-based tourism with wildlife component; (2) Locations with good wildlife opportunities; (3) Artificial attractions based on wildlife; (4) Specialist animal watching; (5) Habitat specific tours; (6) Thrill-offering tours; and (7) Hunting/fishing tours. Birdwatching is included in number (4) as it is characterized by tours for those who are interested in a species or group of species, in this particular case: birds.

In the words of Roig (2008:102) birdwatching is:

> "A journey whose purpose is to engage in leisure activities involving ornithology, namely the detection, identification and observation of avifauna, with the objective of being in contact with nature to satisfy educational needs and/or achieve personal satisfaction".

Birdwatching does not involve much equipment for beginners and it does not require physical ability to participate. Because it is a low-cost activity the number of participants is higher than in other nature related options. As it is a non-consumptive activity it also appeals to the public awareness of sustainability and environmental issues (Jr, Stoll & Ditton, 2004). So birdwatching is simultaneously: easy to do; can be done anywhere; is open to everyone; does not require much investment (depending on the birdwatcher's interest and motivation); can be done all year round; and offers effortless and close contact with nature.

Birdwatching first appearance is dated from the prehistoric, but in its beginning the primary motivation was to discovery more about the habits and characteristics of birds. From the study to improve hunting methods, the motivation evolved to collecting and only far more recent it became a recreation activity (Mogollón, Cerro & Durán, 2011). Even in the XVIII century the purpose of this recreation activity was mostly to acquire specimens for private and public collections and museums (Amaral, 2009). The word "birdwatching" appeared for the first time in 1901 (Roig, 2008). The practice of birdwatching as a touristic activity started about 30 years after (Amaral, 2009).

Birdwatching has been more popular mostly in Anglophone countries of North Europe, where the United Kingdom was pioneer in this activity. This fact is strongly related with the powerful conservation culture associated to these countries (Ministro & Miguel, 2009). Recently Mediterranean countries such as Spain, Italy and Portugal are gaining fans of the activity (Turismo do Algarve, 2012). The increasing popularity of birdwatching is related with its environmental-friendly characteristics along with the economic advantages for local communities (Green & Jones, 2010). The economic benefits for locals are confirmed by several studies, as tourist's expenditures contribute directly to generate employment locally (Tisdell & Wilson, 2004). When it comes to conservation issues many authors argue that wildlife tourism activities, such as birdwatching, are important in long-term conservation both for species and habitats. A well-designed product with a good management plan can protect species, contribute to conservation and change visitors' attitudes (Ballantyne, Packer & Hughes, 2009).

Nevertheless, there are also negative impacts specially when birdwatching is practiced at very sensitive habitats or involve threatened species. It can affect both the birds being observed and other species in the surrounding area (Green & Jones, 2010). Some papers identify negative impacts on birds populations related with breeding, feeding,

population levels and population distribution. There is still lack of studies that test the impacts and mitigation measures (Jackson, 2007). Especially in the breeding season, which attracts birdwatchers looking to displaying birds, changes in plumage patterns and new-borns, the impacts can be serious (Amaral, 2009).

2.2 Birdwatchers

Birdwatchers are those who practice birdwatching activities. This group is characterized as being diverse in terms of socio-economic characteristics, motivations and preferences (Lee *et al.,* 2010). It is possible to sub-divide birdwatchers into different categories using different typologies. Wright (1995) identified two categories: experts and occasional birdwatchers. Later, Jones & Buckley (2001) took into account the motivations and the willingness to pay of birdwatchers and distinguished four categories: general birdwatchers; specialist birdwatchers with restricted budgets; specialist birdwatchers willing to pay to see birds; and specialist birdwatchers requiring packaged birding.

To characterize birdwatchers the simplest approach is the one purposed by Mogollón, Cerro & Durán (2011) who considers only two groups of birdwatchers attending their specialization level, motivation and logistics restrictions: "birders", which are less specialized and "twitchers" which are more engaged in the activity. Regarding "birders" their main motivation is the contact with nature and biodiversity, and they practice birdwatching as a complementary activity (Ministro & Miguel, 2009). According to Roig (2008) the majority of birdwatchers are included in this group.

On the other hand, "twitchers" have birds as their primary motivation and the observation of birds is the reason of their travellings. "Twitchers" choose the locations considering the species they can see there. They have the goal to increase their personal list of observed bird species and overcame other "twitchers" (Roig, 2008). Their bird knowledge is above average and they are competitive having sometimes a degree of hierarchical social structure and stages of development (Connell, 2009). "Twitchers" are very demanding regarding accommodation and tourism services (Roig, 2008).

Several studies have been made worldwide to determine birdwatcher profile, with special focus on the USA market. Cole and Scott (1999) characterized the members of American Birding Association with an average age of 65 years old, with high income

and education levels. Scott and Thigpen (2003) have studied the Hummer/Bird Celebration in Rockport Texas. They have concluded birdwatchers in the area were mostly females (76%), 66% of the respondents had over 46 years old, 75% were married and a rate of 57% were university graduates. The majority belonged to middle to upper classes with a household income of 40000$/annual or more. Moreover about 34% were already retired. Another study conducted in Nebraska, Texas, New Jersey and California (Jr, Stoll and Ditton, 2004) concluded that birdwatchers were homogeneous in terms of gender, age and race. Age, education level and household income were according to previews studies. On a later survey conducted in North Carolina, Moore, Scott and Moore (2008) had a sample composed with mostly men (59%), with an average age around 54 year old and confirmed the high education and income levels.

In Asia and Australia Lee *et al.* (2010) and Green and Jones (2010) described South Korean and Australian birdwatchers as being equally males and females with higher education than other tourists. In south Queensland birdwatchers were also likely to practice complementary activities such as hiking.

Roig (2008) summarized the Spanish birdwatcher profile: 25 to 45 years old; high education level; spend a maximum of 5 days in the area; combine birdwatching with other activities; and spend on average 100€ per person per day.

In Portugal there are not many studies about birdwatcher's profile and the existing ones are very recent. About international birdwatchers in the Algarve, Machado (2011) found the European market was mainly composed by North Europeans, with high education and income levels, living in urbanized areas and with an average of 55 years old. Guimarães *et al.* (2014) inquired birdwatchers at Praia da Vitória, Ilha Terceira, Azores. They were able to understand that most birdwatchers in the area stayed 3 days on the site and spent on average 42€ per day on food and accommodation. Also birdwatchers were mostly people in the group age of 39 to 48 years old and earn on average approximately 2400€ per month.

Although all the heterogeneity within birdwatchers based on the conclusion of these nine studies it is possible to resume some general characteristics (see Table 2.1).

Table 2.1 – General birdwatcher profile

Socio-economic characteristics	More than 45 years old
	Upper-middle class
	High academic and cultural level
	Informed, responsible and demanding
Travel characteristics	Travel in groups
	Travel out of high season and to less touristic places
	Enjoy contact with local people, cultural heritage, gastronomy, among other characteristics of tourist destinations
	Length of stay above average
	Amount spent in the destination above average

Generally birdwatchers are highly educated, have high incomes and have a high environmental consciousness (Connell, 2009). They normally stay more days in the destination and spend more than other tourists. Birdwatchers are well informed people who, besides the central point of bird observation, look to have contact with locals, discover the cultural heritage and local gastronomy (Ministro & Miguel, 2009). About gender, women are increasingly more engaged in the activity, so nowadays there is almost no difference between the number of men and women doing birdwatching (Machado, 2011).

As birdwatchers are heterogeneous, the supply of birdwatching tourism services is very diverse. For example, tours offered by birdwatching operators vary from intensive, hard trekking and with long wait to observe birds, to tours where stops are made to see the scenery and where birds can or cannot be spotted (Jackson, 2007).

2.3 Birdwatching in the Natural Park of Ria Formosa

According to Ministro & Miguel (2009), the potential for birdwatching activities in the Algarve was already recognized by the Regional Tourism Identity of Algarve (ERTA). Although there are not official data the study refers the Algarve and the Alentejo as the most popular regions in continental Portugal to practice birdwatching. Tourism of Algarve highlights the existence of birdwatching hotspots in the region, such as the

RFNP (Turismo do Algarve, 2012). The importance of promoting the region as a birdwatching destination increases along with the continuous growth in the demand of birdwatchers worldwide, in particular from countries of northern Europe (Turismo do Algarve, 2012).

Despite the effort in advertising and the studies conducted about the potential of the region, the supply of birdwatching tourism activities in the Algarve is still weak and disorganized (Ministro & Miguel, 2009). The weaknesses are related with the lack of infra-structures and scarce availability of information. The value of the Algarve as a birdwatching destination focus on the area natural assets such as the existence of birds with high observation value and the concentration of both aquatic and terrestrial birds of easy observation (Ministro & Miguel, 2009).

Natural characteristics of the area provide ideal conditions for birds. The RFNP is one of the most relevant wetlands in Portugal. It´s importance is related with the fact of being internationally considered a hotspot for aquatic birds in Europe (Amaral, 2009). The different protection status of the RFNP are also related with its bird relevance (Sociedade Polis Litoral, 2010).

Furthermore, many species choose its salt marshals to breed or to rest during migration. The geological and water characteristics (like the simultaneous presence of fresh water, salt water and brackish water) make it possible the coexistence of a large variety of bird species (Amaral, 2009). These characteristics make the wetland appealing for birdwatchers (Turismo do Algarve, 2012).

2.3.1 Ornithological Factors

Portugal is rich in bird species, more than 404 species have been observed since the beginning of birdwatching in Portugal, some of those scarcely distributed in Europe and in the world. This number includes not only resident species but also species passing by during migration, wintering and breeding species (Amaral, 2009).

About 395 bird species have been observed in the Algarve, being this region at the top of observed species in continental Portugal with more 44 species than the second one (Setubal district) (Aves de Portugal, 2015). This means that around 95% of all bird species observed in Portugal can be seen in the Algarve in a certain time of the year. Some of those species occur mainly in the Algarve and/or have their nesting population

restricted to this region (e.g. Audouin Gull, Lesser Short-Toed Lark, Ferruginous Duck and Pied Avocet). Other differentiating characteristics of the Algarve that makes it a remarkable place to practice birdwatching are: the Algarve is the region of continental Portugal where annually are observed the highest number of rarities; and more than 50 species that occur in the Algarve are not present or are very rare in the UK and other Nordic countries.

Besides the big variety of species there are several events of ornithological importance taking place in the Algarve though the year. Those events include migration, breeding times and off-springs of interest species (see Table 2.2).

Table 2.2 - Ornithological events in the Algarve by season

Winter	. Concentration of large numbers of ducks and waders in wetlands . Bonelli's eagle starts its display . It is possible to hear Eagle Owls as they call to defend their territory . Arrival of Barn Swallows . White Storks return to their nests
Spring	. Spring migration starts with the arrival of migratory birds from Africa to nest and the departure of wintering species . Arrival of breeding species like cuckoo, bee-eaters and nightingales . Most species begin to nest . It is possible to see offspring being fed and leaving their nests . Red-necked nightjar and nightingales are heard during the night
Summer	. Terns return to their colonies on the barrier islands of Ria Formosa . It is possible to observe families of Black-winged Stilts and Kentish Plovers . Concentration in flocks of hundreds of storks . The first birds of prey begin their journey to Africa, in particular, Black Kite and Montagu's Harrier . Transharian passerines pass through Portuguese territory
Autumn	. Post-nuptial migration . Large concentrations of birds of prey . Griffon Vultures disperse cross the Algarve towards the Strait of Gibraltar . Arrival of wintering birds

Adapted from Costa (2003:20-22)

RFNP is a place of high diversity of bird species. Aquatic birds are a group well represented with mostly species from the orders *Gaviiformes, Podicipediformes,*

Anseriformes, *Gruiformes* and *Charadriiformes.* A total of more than a hundred species from this group is present in the region (Amaral, 2009).

RFNP is also an important place for breeding. Some examples of species that breeds inside the limits of the protected area are: Little Bittern, several species of grebes and duck, Purple Gallinule (the symbol of the park), Great Reed Warbler, Azure-wiged Magpies, Night Heron, Black-winged Stilt, Kentish Plover, Bee-eater, Collared Pratincoles, Avocet and Little Tern (Vowles & Vowles, 1994).

There are two species globally threatened that are present in the RFNP: *Aythya nyroca* and *Larus Audouinni*. The last one not only occurs in the area as it also breeds there (Costa, 2003).

2.4 Environmental Awareness – New Ecological Paradigm Scale

Being included in the ecotourism sector, birdwatching should have minimal impacts on the environment and benefit local communities. That is only possible if the actors involved in the tourism activity (tour operators, travel agents, customers, host populations and others) are able to behave according those values. They are the ones that can impact positively or negatively on the environment (Jackson, 2014). Therefore, it is important to understand the environmental attitudes of all the stakeholders. In this study the visitors will be analysed about their environmental awareness. The environmental awareness of visitors is even more important when they travel to a natural destination, like a protected area (Santos *et al.*, 2014)

The New Ecological Paradigm Scale (NEP) is used in this study to measure, in the words of Dunlap (2008:10), "the degree to which respondents view the world ecologically". Since it was published in 1978, it has gain popularity around the scientific community being nowadays the most used method to measure environmental beliefs. This is important to understand environmental attitudes to further know why people treat the environment as they do. In the words of Hawcroft & Milfont (2010:143) environmental attitudes are *"*a psychological tendency expressed by evaluating the natural environment with some degree of favour or disfavour, and are a crucial construct in the field of environmental psychology (….)".

The NEP scale appeared to homogenize the research on environmental attitudes, as before Dunlap and Van Liere scale these studies were conducted in an unsystematic

way. A new measure was created for almost every new study which resulted in several hundreds of measures (Hawcroft & Milfont, 2010).

There are numerous studies applying NEP not only to the general public, but also applied to specific group samples like members of interest groups (Dunlap *et al.*, 2000). Filho *et al.* (2010) refer this scale is important to analyse the society immersion in the paradigm. Moreover it can be used to support environmental policies and as a comparative analyse between societies. Examples of this application are: Gooch (1995) who applied the NEP scale to compare environmental attitudes among Baltic countries and Furman (1998) who applied the NEP scale in Istanbul.

Only long after its creation the NEP was applied to tourism (Lück, 2003). For example Ryan (1999) analyzed if wildlife attractions in Australia were more appealing for certain market segments by using this scale. Later Higham et al. (2001) applied the NEP scale to seek for a relationship between environmental awareness and the experience on swim-with-dolphins tours in New Zealand.

In Portugal, Santos *et al.* (2014) used the NEP scale in the Berlengas' islands with the aim to evaluate the environmental awareness and attitudes of islands' visitors. They found that the visitors were mostly aware about the environment but nevertheless they had mid-ecological beliefs and so they can have negative impacts on the visited area.

The NEP scale embraces three dimensions (see Table 2.4) – equilibrium of nature, boundaries of growth and human control over nature. In this scale the higher the score, the stronger the pro-environmental attitudes (Dunlap *et al.*, 2000).

Table 2.3 - The three dimensions of the original NEP scale

EQUILIBRIUM OF NATURE	**2**	The balance of nature is very delicate and easily upset.
	5	When people interfere with nature it often produces disastrous consequences.
	8	People must live in harmony with nature in order to survive.
	12	People are severely abusing the environment.
BOUNDARIES OF GROWTH	**1**	The Earth is approaching the limit number of people it can support.
	7	To maintain a healthy economic situation we will have to develop a 'steady state' economy where industrial growth is controlled.
	9	The Earth is like a spaceship with only limited room and resources.
	11	There are limits to growth beyond which our industrialised society cannot expand.
HUMAN CONTROL OVER NATURE	**3**	People have the right to modify the natural environment to suit their needs.
	4	People were created to rule over the rest of nature.
	6	Plants and animals exist primarily to be used by people.
	10	People need not adapt to the natural environment because they can remake it to suit their needs.

Souce: Adapted from a table of Hawcroft & Milfont (2010:145)

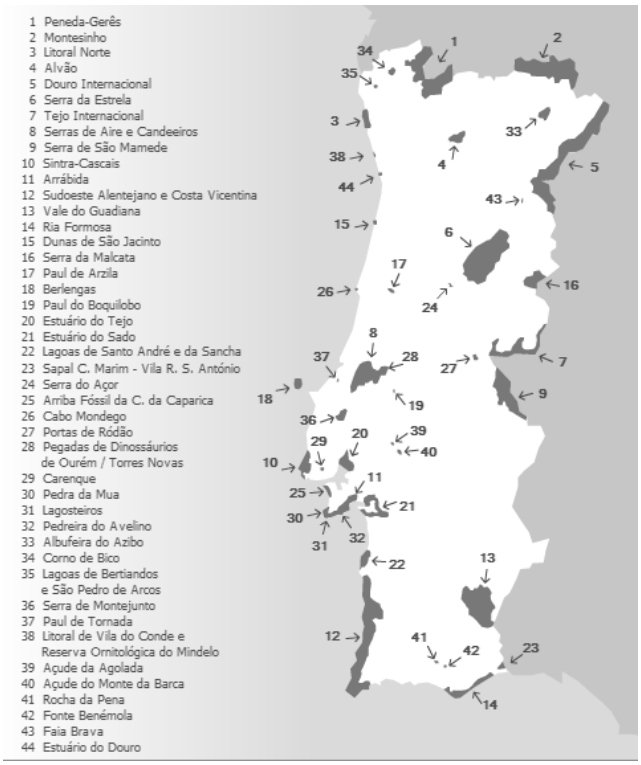
CHAPTER 3. METHODOLOGY

3.1 Study Site

Ria Formosa Natural Park (RFNP), located in the south-east coast of the Algarve, is one of the most important wetlands in Europe and worldwide (Ceia *et al*, 2010). The importance of wetlands is recognized globally. In Europe, these constitute only 3% of the total territory. Its importance is related with the fact that it is one of the most productive ecosystems in the world, essential to several species of aquatic birds (Amaral, 2009).

RFNP is included in the National Network of Protected Areas (Figure 3.1) and its protection status was created by Decree-law nº 373/87, of 9th December, in 1987. The place was classified as a Natural Park to protect the existing natural values, to contribute to regional and national development, and to ensure the adoption of measures compatible with the objectives of classification. This protection includes all the lagoon system, its fauna, flora and habitats, and it protects also the migratory species (Ministério do Plano e da Administração do Território, 1987).

Figure 3.1 - Map of Portuguese protected areas and geographic location of Ria Formosa Natural Park



Source: ICNF (2015a)

The protected area extends for 60 kilometers occupying around 18 400 ha, 7 895 ha of which are inland and 10 505 ha wetlands crossing five municipalities (Loulé, Faro, Olhão, Tavira and Vila Real de Santo António) (Amaral, 2009).

Figure 3.2 - Geographic limits of Ria Formosa Natural Park

Source: ICNF (2015b)

RFNP is characterized by coastal sandy dunes that protect a lagoon forming a variety of natural habitats: barrier islands, mudflats, dunes, salt marshes, freshwater ponds and brackish water, waterways, forests and agricultural areas (Ceia *et al*, 2010). These environmental characteristics make RFNP a place rich in biodiversity. To protect its biodiversity, Ria Formosa received several classifications that recognize its environmental importance, such as, Special Protection Area for Birds, Rede Natura 2000, Ramsar Site and Important Bird Area (IBA) (Sociedade Polis Litoral, 2010). Some of the protection classifications are specific for birds. The RFNP is an important site for these species as it has a big variety of birds and also some protected and emblematic species. It is a nesting zone and it has international importance for migration of birds (Ceia *et al*, 2010) along with other biological and ecological functions like offering food and shelter for many species (Sociedade Polis Litoral, 2010).

The climate is of Mediterranean type with long, hot, dry summers and mild winter (Vowles & Vowles, 1994). Temperatures are mild all year around, with a mean of 25ºC in the summer and 12ºC in the winter (Newton & Mudge, 2003). On the economic dimensions, RFNP supports many activities, like, fishing, aquaculture, shipping, harvesting of bait, tourism, salt production and sediment extraction (Ribeiro *et al*, 2008).

3.2 The Survey

A survey was applied in order to characterize birdwatching visitors. Survey is the most used technique in tourism research (Machado, 2011).

The survey was conducted in the natural trail of "Quinta de Marim". This is the only trail that is clearly delimitated with fences and where it is necessary to pass through a reception point. Inside the area there is a Wildlife Rehabilitation Centre with an environmental interpretative Centre. This was the place where the survey was applied when visitors stopped to see the exhibition and rest. All types of birdwatchers from experienced ones to the general visitor who happens to try a bit of birdwatching were included in the study. The questionnaires were applied on different days of the week and different hours of the day to reduce possible biases in the sample (Tisdell & Wilson, 2004). Those who answered the questionnaire were engaged in participating in birdwatching activities and were over 18 years old.

Considering that people were in their leisure, time the questionnaire was short and could be filled in less than ten minutes. Questions were both multiple choice and open-ended. The questionnaire had 33 questions divided in four major groups of questions: Birdwatching in the Ria Formosa Natural Park; Birdwatching Background; Environmental Awareness; and Background Information (Appendices 1).

The first group aimed to understand birdwatchers' motivations and their opinion about the park experience. In this group respondents were asked how many times they have been there, with whom and for how long. They were also asked about the main reason for the visit. Questions about satisfaction, intention to return and willingness to recommend the park to friends and family were also part of the first group. A question about the willingness to pay an entrance fee to improving birdwatching infra-structures

was also included. This particular question challenged the respondents to consider the following scenario:

> *Suppose a fund would be raised to improve birdwatching facilities in the Ria Formosa Natural Park. This would include:*
>
> *- More and improved observatories;*
>
> *- Information panels and travel guides;*
>
> *- Availability of binoculars and field guides.*
>
> *Assume that this fund would be financed by collecting an entrance fee to Quinta de Marim (this trail). Would you be willing to pay a fee? If Yes, what is the maximum amount?*

In the second group of questions, respondents were questioned about habitats related with birdwatching as it is important to understand the level of commitment with the activity especially in this study that included all types of birdwatchers. Questions like the use of special equipment (e.g. bird field guide or telescope) and the number of days dedicated to this activity per year were posed.

The third group of questions was dedicated to attitudes towards conservation and the environment and for that the New Environmental Paradigm (NEP) was the chosen method. The NEP has three versions and the one used in this study is the original NEP scale, a 12-item scale using Likert-type responses (Dunlap, 2008). On this scale items 2, 5, 8, 12 are related to balance of nature, items 1,7, 9, 11 approach the limits to growth and the remaining items are about human dominance over nature. The agreement with these last ones indicates anti–NEP responses (Hawcroft & Milfont, 2010). Dunlap *et al.* (2000) found it a scale with considerable validity as it has been tested repeatedly and it is acknowledged in several areas like psychology, political science, sociology and geography (Santos *et al*.,2014).

At last socio-economic data is crucial to define the sample characteristics. This group includes questions about nationality, gender, age, education level and monthly household income. This group is important to understand if socio-economic characteristics influence individual's birdwatching behaviour (Machado, 2011).

A pre-test was applied during five days in October and a total of 12 questionnaires were answered. From the pre-test slight changes in three questions were introduced. On the

willingness to pay question, it was added a note ("this trail") after "Quinta de Marim", as some people did not recognize the place by its name. Also a new sentence was written to explain how to proceed in the NEP table. In the income question the answer was changed from open-ended to income intervals.

The sampling was random and it was used a method of cluster sampling. "Quinta de Marim" was selected as a representative cluster of the RFNP. This cluster has similar characteristics to the rest of the park. Time and monetary restrictions made it unfeasible to apply the survey on other park sites.

The survey was available in four different languages: English, Portuguese, Spanish and Dutch (Appendices 1-4). The questionnaire was applied during the months of November 2014 and February, March and April of 2015, to include bird migration periods. A sample of 203 birdwatchers was reached. Out of these, 18 were excluded: three because were very incomplete and fifteen because respondents were not birdwatchers. A total of 185 valid questionnaires were obtained, corresponding to 91.1% of the selected sample. This number ensures a maximum margin of error of 7.2% for a 95% confidence interval on a population proportion.

3.3 Data Analysis Method

To analyze the data collected from the survey, it was used the SPSS Statistics 21 program. The program was used to do the descriptive statistics and to test hypotheses. The descriptive statistics was used to do an initial characterization of the sample by describing the profile of the birdwatchers in the RFNP. This included frequency tables, means and cross tabulations. Then it was tested the influence of nationality in three different aspects: days per year dedicated do birdwatching (H1), willingness to pay for improvements in the birdwatching conditions (H2) and the visitation of other sites in the Algarve (H3).

The normality of the data was tested using the Kolmogorov-Smirnov test and the variance homogeneity was tested through the Levene test. To test hypotheses 1 and 2 the Kruskal-Wallis H-test was chosen. The Kruskal-Wallis H test is a rank-based nonparametric test used as an alternative to the one-way ANOVA (Laureano, 2013). It is used to determine if there are statistically significant differences between two or more groups of an independent variable on a continuous or ordinal dependent variable (Laerd

Statistics, 2013). Kruskal-Wallis cannot tell which specific groups are statistically different from each other. If it is important to find which groups differ from each other it is necessary to use a *post hoc* test (Laureano, 2013). For hypothesis 2 it was necessary to do a *post-hoc* test: Scheffe's test[4].

The Chi-square test was performed to compare the nationalities and their relation with the practice of birdwatching in other sites in the Algarve (H3). This test is used to investigate if the distributions of two categorical variables are independent.

All the tests were performed considering a critical value of 5%, the most commonly used value. Meaning that if the p-value is smaller than 0.05, the null-hypothesis should be rejected.

[4] Scheffé's test is a single-step multiple comparison procedure which applies to the set of estimates of all possible contrasts among the factor level means. It is the most flexible, and the most conservative of all *post hoc* procedures (Stevens, 1999).

CHAPTER 4. RESULTS

This chapter presents the results of the 185 valid questionnaires and it is divided into two sections. In the first one, a descriptive analysis is undertaken to characterize the birdwatching visitors according to socio-economic variables, birdwatching at "Quinta de Marim", willingness to pay, birdwatching background and environmental awareness. In the last section three hypotheses regarding nationality are tested.

4.1 Descriptive Analysis

4.1.1 Socio-economic Characteristics

The profile of the birdwatcher in "Quinta de Marim" was characterized by using several socio-economic variables. Table 4.1 presents the findings for the respondents' nationality and country of residence.

Table 4.1 – Nationality and country of residence of the respondents (n=184)

Nationality	No	%	Country of residence	No	%
British	72	39.1	United Kingdom	67	36.4
Dutch	32	17.4	Portugal	41	22.3
Portuguese	31	16.8	Netherlands	27	14.7
Belgian	11	6	Belgium	11	6
Spanish	11	6	Spain	9	4.9
German	9	4.9	Germany	8	4.3
Canadian	4	2.2	Switzerland	5	2.7
Swiss	4	2.2	Canada	4	2.2
Swedish	3	1.6	Sweden	3	1.6
Danish	3	1.6	Denmark	3	1.6
Irish	2	1.1	Ireland	3	1.6
Australian	1	0.5	France	2	1.1
French	1	0.5	North Irland	1	0.5

The majority of the respondents are British (39.1%), followed by Dutch (17.4%) and Portuguese (16.8%). Other important nationalities are Belgian (6%), Spanish (6%) and German (4.9%). Except for four Canadians and one Australian, all respondents are European. Regarding country of residence, 36.4% of the respondents live in the United Kingdom and 22.3% in Portugal. This means that almost 60% of the birdwatchers in

"Quinta de Marim" come from these two countries. It also demonstrates that there are some foreign birdwatchers living in Portugal. The results also show that the birdwatchers who live in Portugal are mainly from Faro (63.4%).

Other main socio-economic characteristics of the birdwatchers surveyed are provided in Table 4.2. Men are more frequent (54.9%) than women, but the difference in gender is not very accentuated. The average age is 50 years old. The majority of the sample is married (51.4%). About 46% have no children. Education level shows that respondents are highly educated, with only 26.3% not having an university degree. About 44% of the respondents have a bachelor's degree and 22.9% a master's degree.

As for professional status, birdwatchers are mostly retired (41%) and an equal percentage (18.5%) are employed by the State and by the private sector.

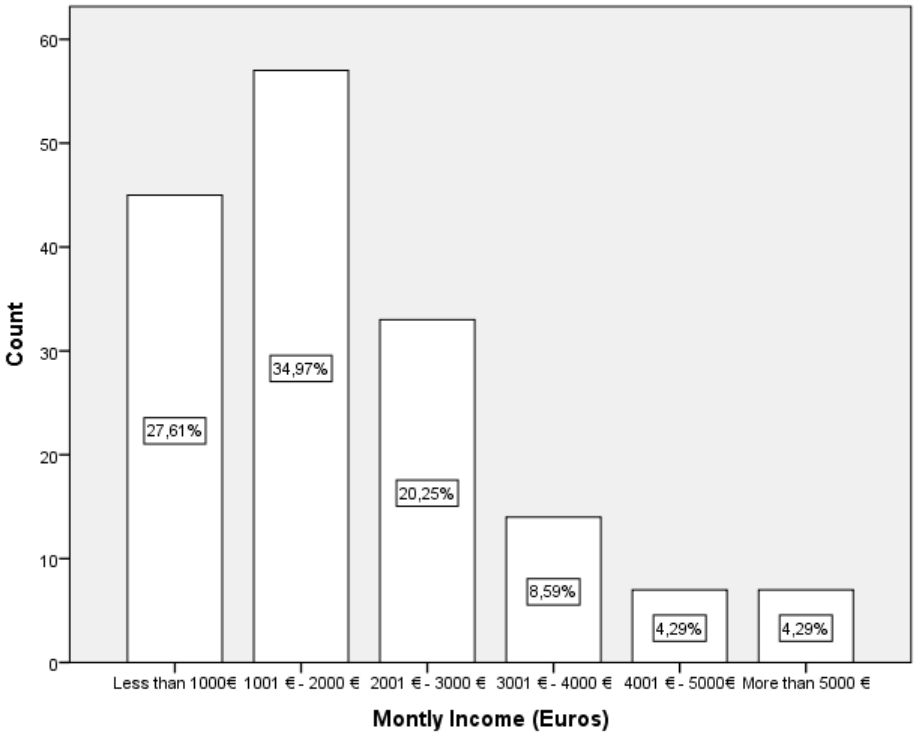
Table 4.2 - Socio-economic data

Variables	Distribution of answers
Gender	**Male - 54.9 %**; Female – 45.1 %
Age	18 to 35 – 27.7%; **36 to 64 – 50.3%**; Over 64 – 22%
Marital Status	Single – 28.6%; **Married – 51,4%**; Divorced – 2.2%; Widowed – 3.2%; Other – 5.4%
Nº Children	**None - 46%**; One – 6.9%; Two- 35.1%; Three- 8.6%; Four- 0.6%; Five – 1.7%; Six- 1.1%
Educational Qualification	Basic school – 3.4%; High school – 15.1%; **Bachelor's Degree – 44.1%**; Master's Degree – 22.9%; Doctor Degree – 6.7%; Other- 7.8%
Professional Status	Entrepreneur – 9.6%; State – 18.5%; Private – 18.5%; **Retired - 41%**; Student – 8.4%; Unemployed – 3.9%

Regarding individual net monthly income 22 of the respondents did not answered to this question. The most frequent monthly income class is 1001€ to 2000€ (35%) and about 28% receive less than 1000€ per month (Graphic 4.1). The median of the income is 1640€[5].

[5] The median was calculated using the formula for data grouped into classes: Me= 1001 + (0.5-0.276)*(1/0.35)*999.

Graphic 4.1 - Individual net monthly income in Euros (n=163)



4.1.2 Birdwatching in the Ria Formosa Natural Park

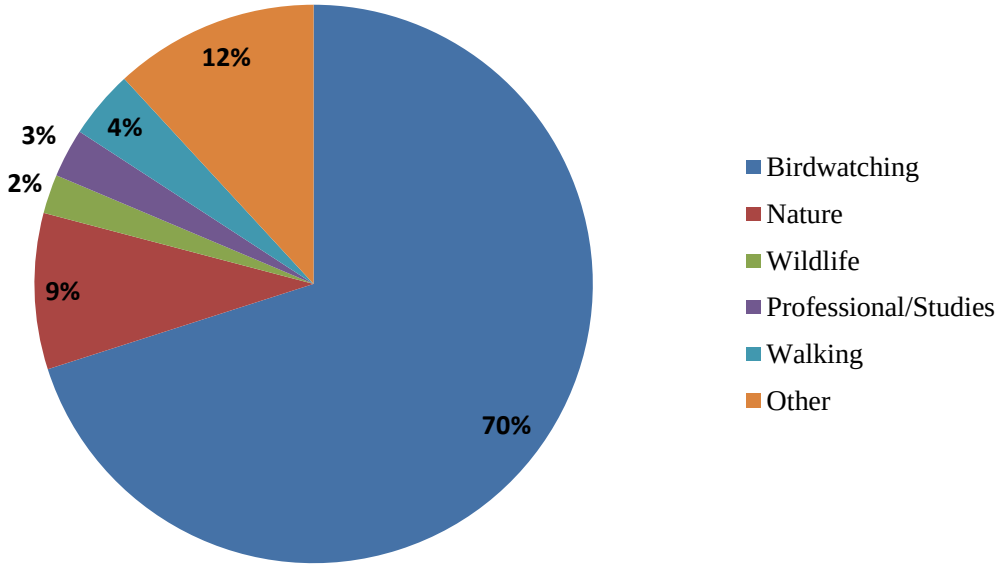
Table 4.3 shows the number of visits to "Quinta de Marim". Around 62% of the respondents went there for the first time. Nevertheless, 52.1% of those who have been there before have visited the park five or more times.

Table 4.3 – Number of visits to "Quinta de Marim"

First time in this park?	**Frequency**	**%**
Yes	114	61.6
No	71	38.4
Total	185	100.0
How many times have you visited it previously?	**Frequency**	**%**
1-2	21	29.6
3-4	13	18.3
5 or more	37	52.1
Total	71	100.0

Regarding the reason why people go to the park (Graphic 4.2), the large majority claims that the primary reason is to do birdwatching (70%). Other primary reasons to visit the place are: nature (9%), walking (4%), professional or scholar reasons (3%) and wildlife (2%). This question was open ended and not everybody answered. As with the other open ended question on the questionnaire several respondents left it blank.

Graphic 4.2 – Main reason to visit "Quinta de Marim" (n=177)



On Table 4.4 there are some aspects about the travel, birdwatching in the area and overall satisfaction. Around 81% are on vacations in the Algarve. On average, birdwatching visitors spend 14 days in the Algarve. This data was categorized into four classes, to better analyze it. This procedure allowed to understand that 53.3% of the respondents spend one week or less in this destination and only 7.5% stay more than 3 weeks. Birdwatchers travel mostly with family (62%) or friends (31.5%).

The overall experience in "Quinta de Marim" is positive, as 87.6% of the respondents are satisfied or very satisfied with the birdwatching experience; 79.8% show interest to return and almost 99% would recommend the site to family and friends.

Table 4.4 – Birdwatching in the Ria Formosa Natural Park

Variables	Distribution of answers
Are you on vacations in the Algarve?	**Yes – 81.1%;** No – 18.9 %
If Yes, what is the duration (in days) of your stay?	**1-7 days – 53.3%**; 8-15 days – 31.7%; 16-21 days – 7.5%; 22 or more days – 7.5%
Who are you travelling with?[6]	Alone – 4.9%; **Family - 62%**; Friends- 31.5%; Other – 7.6%
Classify your overall satisfaction of the birdwatching experience in this park:	Very unsatisfied- 3.2%; Unsatisfied – 1.6%; Not satisfied nor unsatisfied – 7.6%; **Satisfied – 59.5%**; Very satisfied – 28.1%
Do you intent do return to birdwatch in this park in the future?	**Yes – 79.8%**; No – 20.2%
Would you recommend this park for birdwatching to your friends and family?	**Yes – 98.9%**; No – 1.1%
Have you ever done (your intent to do) birdwatching in other sites in the Algarve?	**Yes - 60%**; No -40 %

Most respondents have already done or intend to do birdwatching in other places in the Algarve (60%). This means that this kind of visitors do not stay only in one place and like to visit several places in the destination. These 60% were questioned about which other locations they had visited or intend to visit, in an open ended question. The answers were classified according birdwatching places in the Algarve defined by Ministro & Miguel (2009) and several respondents answered more than one place. The most visited places are the Natural Park of Ria Formosa (62.1%), Costa Vicentina (47.4%) and the areas of Castro Marim and Vila Real de Santo António (42.1%) (Table 4.5).

[6] In this question some respondents selected more than one answer, so the values represent the proportion of each answer over the total number of respondents.

Table 4.5 – Places in the Algarve where respondents did or intend to do birdwatching (n=111)

Birdwatching Places	Frequency	%
Natural Park of Ria Formosa except "Quinta de Marim"	59	62.1
Costa Vicentina	45	47.4
Castro Marim and Vila Real de Santo António	40	42.1
Serra do Caldeirão e Barrocal	21	22.1
Silves and Lagoa dos Salgados	21	22.1
Other places	20	21.1
Lagoa, Arade, Alvor and Lagos	19	20
Serra Monchique	19	20
Baixo Guadiana	12	12.6
Albufeira and Paderne	12	12.6
Loulé	11	11.6

To understand if there was a relation with the first time at "Quinta de Marim" and the nationality of the visitors a Cross-tabulation was performed (Table 4.6). As expected, due to proximity, most of Portuguese have visited the park previously (70%). Regarding foreigners, 32% of the visitors from other nationalities have been in the park before. The percentage is higher among British individuals (40%).

Table 4.6 – Nationality and first time in the park

Cross-tabulation

Nationality * Is this your first time in this park?

		Is this your first time in this park?		Total
		Yes	No	
Nationality	Portuguese	9	22	31
	British	43	29	72
	Dutch	23	9	32
	Belgian	9	2	11
	Spanish	9	2	11
	Others	20	7	27
Total		113	71	184

Then the relationship between nationality and intention to return was explored. All Portuguese in the sample answered "Yes". Among the other most important nationalities, British and Dutch, the values were 82% and 67% respectively (Table 4.7).

Table 4.7 – Nationality and intention to return to do birdwatching

Cross-tabulation

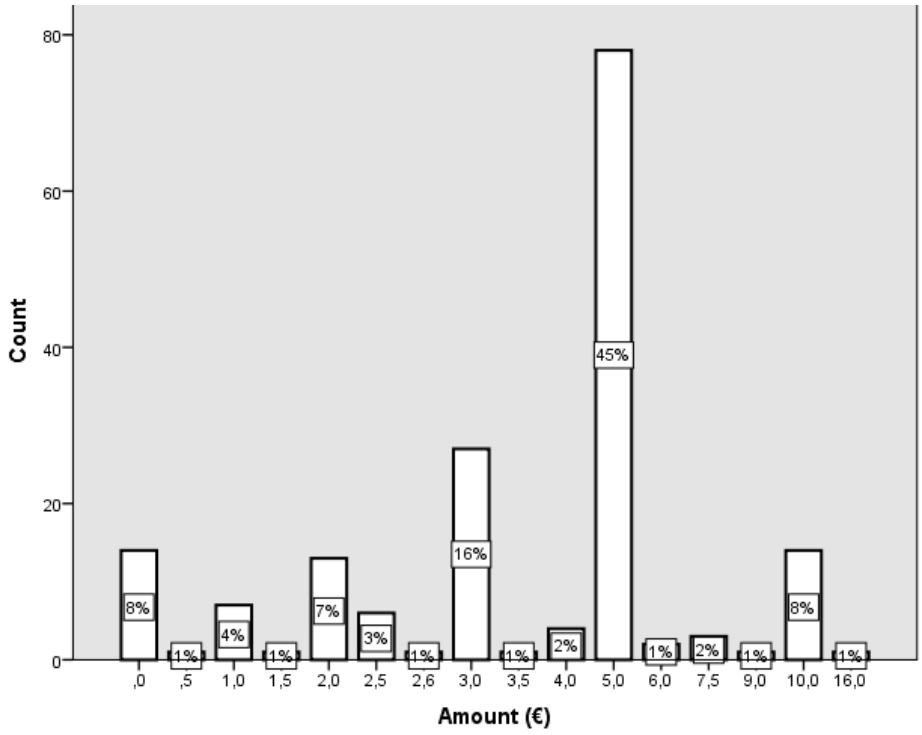
Nationality * Do you intent do return to birdwatch in this park in the future?

		Do you intent do return to birdwatch in this park in the future?		Total
		Yes	No	
Nationality	Portuguese	31	0	31
	British	56	12	68
	Dutch	20	10	30
	Belgian	8	3	11
	Spanish	7	4	11
	Others	19	7	26
Total		141	36	177

4.1.3 Willingness to Pay

In Graphic 4.3 the willingness to pay a fee to improve birdwatching conditions in "Quinta de Marim" can be observed. Around 45% of the respondents are willing to pay a maximum amount of 5€. The range of the amount varies between 0.5€ and 16€ and 8% of the respondents are not willing to pay a fee. On average respondents are willing to pay 4.29€ (Full Table on Annex A).

Graphic 4.3 - Maximum amount respondents are willing to pay to improve birdwatching conditions (n=174)



4.1.4 Birdwatching Background

Table 4.8 shows several aspects of the birdwatching background, which is important to understand the commitment to birdwatching of the respondents. The majority of the respondents are members of nature conservation organizations (62.7%). In Portugal SPEA and ALDEIA are two of the most selected. Abroad there are stated organizations like Royal Society for the Protection of Birds (RSPB) (UK), Wildfowl & Wetland Trust (UK), Vogelbescherming (NL) and Natuurmonumenten (NL). Most of the respondents consider themselves with average knowledge of birds (50.8%) and a significant percentage considers themselves as being above average (35.1%).

On average respondents do birdwatching 95 days per year. It should be noted that around 25% of the respondents do birdwatching more than 140 days per year. The mode is 10 days per year and 56.3% of the respondents do 1 to 30 days of birdwatching per year (full Table on Annex B). A high percentage of the respondents do birdwatching during vacations (85.4%). Also a significant percentage affirms to have specialist birdwatching gear (70.3%).

Table 4.8 – Birdwatching background

Variables	Distribution of answers
Are you a member of any nature conservation organization?	**Yes – 62.7%**; No – 37.3%
Do you consider your knowledge of birds to be:	Below average – 14.1%; **Average – 50.8%**; Above average – 35.1%
How many days per year do you do birdwatching on average?	**1-30 days – 56.3%**; 31 to 90 days- 13.8%; 91 to 140 days- 5.4%; More than 140 days- 24.6%
When you travel on vacations do you do birdwatching?	**Yes – 85.4%**; No – 14.6%
Do you have specialist birdwatching gear?	**Yes – 70.3%**; No – 29.7%

Table 4.9 shows the gear people own. Respondents could answer more than one item. Around 91% of the inquired have specialist binoculars and 79% have bird field guides. The less owned gear is the special camera (33.1%). A minor percentage also has other equipment (6.2%) like recorders.

Table 4.9 – Special birdwatching gear (n=130)

Birdwatching Gear	Frequency	%
Specialist Binoculars	118	90.8
Bird Field Guide	102	78.5
Telescope	46	35.4
Special Camera	43	33.1
Other	8	6.2

4.1.5 Environmental Awareness

To evaluate the environmental attitudes of the respondents it was used the NEP scale. Table 4.10 shows the responses distribution thought a Likert-type-5-point scale (1= completely disagree; 2= disagree; 3= indifferent; 4= agree; 5= completely agree).

A higher environmental awareness is represented by higher scores on the sentences about equilibrium of nature and boundaries of growth (ecological view) and a lower score on the sentences about human control over nature (anthropocentric view) (Frank, 2014).

The majority of the respondents agrees or strongly agrees with ecological sentences. For example 56% of the respondents completely agree that "The balance of nature is very delicate and easily upset.". And the majority also disagrees or strongly disagrees with anthropocentric sentences. The median responses for all groups combined are available on Annex C.

The global NEP score of the respondents was calculated by summing the average scores for each of the 12 item and dividing it by 12 (Lück, 2003). The scores of anti-NEP items (represented in grey on Table 4.10) were reordered so that all high scores indicate pro-NEP responses. The NEP score was 4.22 which indicates a Pro-ecological attitude, the more environmental friendly category of NEP (Santos *et al*, 2014).

Table 4.10 – NEP scale items distribution (in percentage)

	Completely Disagree	**Disagree**	**Indifferent**	**Agree**	**Completely Agree**
The Earth is approaching the limit number of people it can support.	1.1	14.5	10.6	**36.9**	**36.9**
The balance of nature is very delicate and easily upset.	0	2.2	1.6	40.2	**56**
People have the right to modify the natural environment to suit their needs.	20.7	**55.7**	11.5	0.9	1.1
People were created to rule over the rest of nature.	**58.7**	32.1	4.3	3.8	1.1
When people interfere with nature it often produces disastrous consequences.	4.9	4.9	2.7	**45.4**	42.1
Plants and animals exist primarily to be used by people.	**48.9**	40.2	6	4.3	0.5
To maintain a healthy economic situation we will have to develop a 'steady state' economy where industrial growth is controlled.	2.7	7.7	3.8	**55.5**	30.2
People must live in harmony with nature in order to survive.	2.2	1.6	1.6	28.4	**66.1**
The Earth is like a spaceship with only limited room and resources.	2.8	2.2	6.1	41.1	**47.8**
People need not adapt to the natural environment because they can remake it to suit their needs.	**45.3**	35.9	8.3	7.7	2.8
There are limits to growth beyond which our industrialised society cannot expand.	2.8	6.6	6.1	**46.4**	38.1
People are severely abusing the environment.	3.8	1.6	5.5	35.2	**53.8**

4.2 Hypotheses Test

This section aims to analyze if there are behavioral differences among birdwatchers of different nationalities. For that three hypotheses were formulated. The statistic tests used were the Kruskal-Wallis H (H1 and H2) and the Chi-Square (H3). When a significant relation was found through the Kruskal-Wallis H test, the Scheffe's test was performed to identify which nationalities had significant differences on the dependent variable.

The variable "Nationality" was transformed from its thirteen initial categories into four categories: the three more represented nationalities (British, Dutch and Portuguese) and one category combining all the remaining ones (Spanish, Belgian, German, Canadian, Swiss, Swedish, Danish, Irish, Australian and French). This was done as some nationalities had very few representatives and therefore statistical analysis would not be feasible.

4.2.1 Hypothesis 1

H_0: The number of days of birdwatching per year has the same distribution within the different nationalities.
H_A: The number of days of birdwatching per year does not have the same distribution within the different nationalities.
Test: Kruskal-Wallis H
Variables: Nationality and Days of birdwatching per year

In order to understand if the distribution of the number of days dedicated to birdwatching per year changes with the nationality a Kruskal-Wallis H test was performed. This was chosen because the null-hypotheses of the homogeneity variance test of Levene and of the normality test of Kolmogorov-Smirnov were rejected (p-value < 0.05, see Annex D).

In Table 4.11, it is shown that there is no significant statistical difference among the distributions of the birdwatching days per year of the different nationalities (chi-square (3) = 5.064; p-value =0.167>0.05). In other words, we do not reject the null-hypothesis. Therefore we can conclude that nationality does not affect the number of days per year a birdwatcher spends doing birdwatching.

Table 4.11 – Kruskal-Wallis H test for Hypothesis 1

Test Statistics[a,b]

	How many days per year do you do birdwatching on average?
Chi-Square	5.064
df	3
Asymp. Sig.	.167

a. Kruskal Wallis Test
b. Grouping Variable: Nationality

4.2.2 Hypothesis 2

H_0: The amount birdwatchers are willing to pay for improvements in birdwatching conditions has the same distribution within the different nationalities.

H_A: The amount birdwatchers are willing to pay for improvements in birdwatching conditions does not have the same distribution within the different nationalities.

Test: Kruskal-Wallis H

Variables: Nationality and maximum amount she/he is willing to pay

To understand if there is a relationship between the nationality of the birdwatcher and the amount he is willing to pay, a Kruskal-Wallis H-Test was performed. Although the Levene test on the equality of variances did not reject the null-hypothesis, normality test of Kolmogorov-Smirnov did. Therefore the ANOVA test was excluded (see Annex E).

As shown in Table 4.12, there is a significant difference between the distributions of the amount birdwatchers are willing to pay for birdwatching improvements among the different nationalities (chi-square (3) = 28.414, p-value <0.001). This means that nationality influences the maximum amount birdwatchers are willing to pay for improvements in birdwatching facilities.

Table 4.12 – Kruskal-Wallis H-test for Hypothesis 2

Test Statistics[a,b]

	If Yes, what maximum amount?
Chi-Square	28.414
df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test
b. Grouping Variable: Nationality

As the test revealed significant differences among nationalities, a Scheffe's *post hoc* test was performed (Annex F). To perform this test it was necessary to create a new variable representing the ranking of the maximum amount birdwatchers are willing to pay. To create this new variable all responses were sorted in ascending order. In this way, to the maximum willingness to pay was attributed the number of answers to this question (174). With this new variable, the Scheffe's test calculated the mean ranks of the different nationalities. This test shows that differences in the maximum amount birdwatchers are willing to pay are significant between British and all the other nationalities (Dutch, Portuguese and Others). Mean ranks vary from 60.12 for Portuguese and 110.06 for British (Table 4.13). This shows British have the tendency to pay more than other nationalities.

Table 4.13 – Scheffe's test for Hypothesis 2

Rank of Amount

Scheffe[a,b]

Nationality	N	Subset for alpha = 0.05	
		1	2
Portuguese	29	60.12069	
Others	47	75.04255	
Dutch	29	81.39655	
British	69		110.05797
Sig.		.223	1.000

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 38.192.
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

4.2.3 Hypothesis 3

H_0: The practice of birdwatching in other places of the Algarve is independent of nationality.

H_A: The practice of birdwatching in other places of the Algarve is dependent of nationality.

Test: Chi-Square

Variables: Nationality and practice of birdwatching in other places of the Algarve

In order to understand if there is a relationship between birdwatcher nationality and the practice of birdwatching in other places of the Algarve, a Chi-Square Test was performed. This test was chosen as it examines relationships between categorical variables.

In Table 4.14 is shown that there is a relationship between the practice of birdwatching in other places of the Algarve and the birdwatcher's nationality (Chi-Square = 23.617; p-value < 0.001). In other words, we reject the null-hypothesis.

Table 4.14 – Chi-Square Test for Hypothesis 3

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	21.569[a]	3	.000	.000		
Likelihood Ratio	23.859	3	.000	.000		
Fisher's Exact Test	22.887			.000		
Linear-by-Linear Association	11.104[b]	1	.001	.001	.001	.000
N of Valid Cases	185					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.40.
b. The standardized statistic is 3.332.

In order to explore the relationships between nationality and the practice of birdwatching in other places of the Algarve a cross tabulation was performed (Table 4.15). The results show that around 90% of the Portuguese birdwatchers have done or intend to do birdwatching on other sites in the Algarve. This percentage is higher than the overall proportion in the sample: 60%. In contrast, only 34% of the Dutch answered "Yes" to this question.

Table 4.15 – Nationality and visitation of other places in the Algarve to do birdwatching

Nationality * Have you ever done (your intent to do) birdwatching in other sites in the Algarve? Crosstabulation

		Have you ever done (your intent to do) birdwatching in other sites in the Algarve?		Total
		Yes	No	
Portuguese	Count	28	3	31
	Expected Count	18.6	12.4	31.0
	% within Nationality	90.3%	9.7%	100.0%
British	Count	45	27	72
	Expected Count	43.2	28.8	72.0
	% within Nationality	62.5%	37.5%	100.0%
Dutch	Count	11	21	32
	Expected Count	19.2	12.8	32.0
	% within Nationality	34.4%	65.6%	100.0%
Others	Count	27	23	50
	Expected Count	30.0	20.0	50.0
	% within Nationality	54.0%	46.0%	100.0%
Total	Count	111	74	185
	Expected Count	111.0	74.0	185.0
	% within Nationality	60.0%	40.0%	100.0%

CHAPTER 5. DISCUSSION

The study results show that birdwatchers in the RFNP are highly educated individuals (with university degree) and they have in average 50 years old. Regarding marital status and occupation this sample meets the results of Scott and Thigpen (2003): birdwatchers are mainly married and a large proportion is retired. The gender follows the general trend of women being equally represented to men in this activity (Machado, 2011).

The results of this study are in line with Machado (2011) regarding some characteristics of birdwatchers in the Algarve. The main nationalities are British and Dutch and visitors travel to the area primarily to do birdwatching but also for different purposes such as other nature-related activities, general holidays and business.

The median monthly net income is 1640€ and 17% of birdwatchers earn more than 3000€. The literature shows that birdwatchers belong to a middle upper class (e.g. Cole & Scott, 1999; Connell, 2009).

Regarding the overall satisfaction of birdwatching experience in "Quinta de Marim", the majority of birdwatchers consider they had a satisfying or very satisfying experience (88%). More than 32% of foreigners visiting the park have been there before. This shows that RFNP has the attractions to make visitors return. Concerning intention to return by nationality, all Portuguese in the sample intend to return. Among British and Dutch the answers are affirmative for 82% and 67% of the respondents, respectively. The ability to maintain customers is very important as to attract a new customer is more expensive than to keep one. Although there is a high overall satisfaction with the experience it may not be directly related with the intention to return. As Jafari (2003) points out: customer satisfaction and customer loyalty is not the same thing.

Concerning the length of stay, birdwatchers in the study spend on average 14 days in the Algarve, being the median in the category of 1 to 7 days, which is according to the profile of nature tourists in Europe (Turismo de Portugal, 2006). Like the European nature tourists, birdwatchers in the RFNP travel mostly with family or friends. Comparing with the study of Guimarães *et al.* (2014) in Azores, the average length of stay of birdwatchers is higher in RFNP (14 days) than in *Ilha Terceira* (3 days).

The majority of the respondents has visited or intend to visit other areas of the RFNP to practice birdwatching (62.1%). This shows that the RFNP is an important area for birdwatching in the Algarve. Therefore, police-makers of the region should invest in

this type of tourism in order to attract more visitors. An important aspect of the study was to understand birdwatchers' willingness to pay to improve the overall conditions of the activity in "Quinta de Marim". It was possible to conclude that birdwatchers are open to the possibility of paying a fee (92%). In average respondents are willing to pay 4.29€ which shows some potential to the application of this fee.

This study did not aim to go deep in the level of birdwatcher specialization by dividing them into birders and twitchers. The objective was rather to characterize the birdwatching background to understand birdwatchers' commitment with the activity. Most respondents consider themselves to have an average knowledge of birds (50.8%) and they have specialist birdwatching gear (70.3%). The majority dedicates between 1 and 30 days per year to birdwatching. More than 85% practice the activity when in vacations. Therefore is possible to confirm that respondents are committed to the activity as they have knowledge about birds, possess special equipment and practice the activity when in vacations. This information can help destination managers and tourism organizations to better develop programs and promotional materials appropriate to the needs of the different levels of interest within the activity (Machado, 2011).

Birdwatchers in the sample show a high environmental consciousness. This is highlighted with the fact that the majority of the respondents are members of one or more nature conservation organizations (62.7%). Furthermore, the overall NEP score is 4.22 which indicates a pro-ecological attitude (Santos *et al*, 2014). This was an expected result as eco-tourists are characterized by a high level of environmental awareness (Guimarães *et al*, 2014).

To further analyze the sample, some hypotheses were tested regarding the influence of nationality on three different behavioral variables. The first test shows that there is no relation between the distribution of the number of days dedicated to birdwatching per year and the birdwatcher nationality. By testing the relationship between willingness to pay and nationality it was found that nationality influences the amount birdwatchers are willing to pay for birdwatching improvements. This test revealed that those differences are only significant between British and all the other nationalities. Mean ranks vary from 60.12 for Portuguese and 110.06 for British, which shows British have the tendency to pay more than other nationalities. This may be explained by cultural differences. Hence, campaigns should be made directly to the UK market in order to attract the public that is more willing to contribute to improvements in the destination.

Nationality is also related with the visitation of others places in the Algarve to do birdwatching. The results show that around 90% of the Portuguese birdwatchers have done or intend to do birdwatching on other sites in the Algarve. This high percentage of Portuguese birdwatchers going to other places in the Algarve may be explained by the proximity to the destination.

CHAPTER 6. CONCLUSIONS

Birdwatching is still not a significant activity in the Algarve. However, its growing rate and the recent acknowledgement by policy-makers that the region has potential in this tourism sector, makes it an important research field. The goal of the study was to characterize birdwatchers at RFNP: to identify the reasons why birdwatchers come to this specific location, their satisfaction level, willingness to pay a fee to improve birdwatching conditions, attitudes towards environmental conservation, birdwatching background and socio-economic characteristics.

Regarding nationality the most well represented ones are English, Dutch and Portuguese. This means that British look for more than the traditional "Sun and Beach" tourism in the Algarve. RFNP has a Mediterranean climate with mild temperatures all over the year which is a plus to attract north European tourists, like English and Dutch. Hence, marketing efforts should be directed to these three countries. The average age of birdwatchers is 50 years old and a large proportion is retired. Retired birdwatchers have more time to practice the activity all year around. This aspect combined with the fact that birdwatching events in the Algarve are concentrated in spring and autumn (e.g. migration and breeding) makes this activity important to reduce tourism seasonality in the region. Most of the birdwatchers are highly educated (Bachelor's degree or higher) and the median monthly net income is 1640€.

Concerning birdwatching background, respondents are committed to the activity as they have knowledge about birds, possess special equipment and do it when in vacations. The more committed the birdwatcher is, like twitchers, the more demanding and the higher is the interest in certain species. So it is necessary to adapt marketing strategies and develop special materials highlighting rare and emblematic bird species.

The relation of the visitor with "Quinta de Marim" is positive. Birdwatchers travel mostly with family or friends and on average stay in the region for 14 days. People tend to return to the location, they recommend it to friends and family and in general they are satisfied with the experience. Nevertheless only 28.1% are very satisfied. This means some aspects can still be improved in the RFNP. Several efforts were made recently with the installation of new bird observatories but the trail still lack bins and cleanness, places to rest in the shadow, information panels on site, and complementary activities and services like the rent of binoculars.

Birdwatchers were asked about the possibility of paying a fee to support the costs of improvements on the birdwatching conditions. A large majority (92%) was available to pay that fee. This response shows a good potential for the implementation of such a fee. However, not only birdwatchers visit the location. Other visitors may not be interested in contributing to the improvements as they do not practice the activity. Visitors can not be distinguished by the motive of the visit in the entrance. A fee would have to be applied to everyone, which could have a negative effect on the number of visitors and their satisfaction level. To a more successful application of the fee, a good advertising campaign should be done showing that the benefits would accrue to all users of the trail. For example, more and improved observatories offer more shelter to rest and enjoy nature in general and more information panels give all visitors better understanding of the surrounding nature. Overall, in terms of environmental awareness, the results show that birdwatchers in the area have an overall pro-ecological attitude. Being a protected area, this is the kind of visitor that can better suit the needs of the destination.

Furthermore, three hypotheses were tested to evaluate if nationality is an important factor in differentiating birdwatchers in terms of behavioural characteristics. This can help to understand if there are specific markets where it pays to invest. Results showed that there is no relation between the days per year a birdwatcher spends doing birdwatching and nationality. This indicates that Portuguese birdwatchers practice the activity as most as foreigners and therefore they should not be underestimated.

A relation was found between nationality and the amount birdwatchers are willing to spend to improve birdwatching conditions. The results also showed that the visitation of other places in the Algarve to practice the activity is related to nationality. British are the ones willing to pay the highest amount. They are also, among foreigners, the ones who more have done or intend to do birdwatching in other places of the region. Therefore, special attention should be paid to the UK market. Targeting the UK market seems a good strategy. It may be less expensive to promote the RFNP as a birdwatching destination to the UK market, when compared to other countries, as British is already the main nationality of tourists in the Algarve.

An advantage of this study is that it covered all types of birdwatchers from casual to serious birders. It also covered migration periods. Machado (2011) only covered more specialized birdwatchers and Amaral (2009) did not cover any migration period.

This study presents some limitations that can be an opportunity to further research. The most pertinent is the size of the sample and the fact that the questionnaire was only applied in one cluster – "Quinta de Marim". Considering the birdwatching market at the RFNP or even the Algarve, there is potential to apply the same method to other places/clusters. As the research aimed to cover several aspects of birdwatchers profile, it did not gathered sufficient information to categorize them into birders and twitchers. This can be done on future research.

The survey also had some limitations. Although a pre-test was applied, leading to changes in some questions, some flaws were still identified. The question about satisfaction could have been complemented with a question about the reasons for their satisfaction or dissatisfaction. This would be helpful to fully understand their satisfaction level rather than just the quantitative analyses. Regarding the age question, many respondents skipped it. Probably if this question was in categories, rather than be open-ended, more people would reveal their age.

The present research can be used as a basis for further studies in the RFNP or even as a comparison to other Portuguese regions, to understand if there are changes on the birdwatcher profile on different Portuguese locations. Moreover, future studies could test the relation between behavioral characteristics of birdwatchers and socio-economic variables other than nationality, such as age and income.

This study suggests that birdwatching tourism has a high potential in the RFNP. Birdwatchers have a high environmental awareness and they are willing to contribute for improvements on birdwatching infra-structures. Furthermore, they tend to return and the main inbound tourism market is the UK. Overall, the results of this dissertation point out that regional tourism organizations should invest in developing birdwatching tourism in the RFNP.

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Annexes

Annex A – Complete data about the question "If Yes, What maximum amount?"

If Yes, what maximum amount?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	14	7.6	8.0	8.0
	.5	1	.5	.6	8.6
	1.0	7	3.8	4.0	12.6
	1.5	1	.5	.6	13.2
	2.0	13	7.0	7.5	20.7
	2.5	6	3.2	3.4	24.1
	2.6	1	.5	.6	24.7
	3.0	27	14.6	15.5	40.2
	3.5	1	.5	.6	40.8
	4.0	4	2.2	2.3	43.1
	5.0	78	42.2	44.8	87.9
	6.0	2	1.1	1.1	89.1
	7.5	3	1.6	1.7	90.8
	9.0	1	.5	.6	91.4
	10.0	14	7.6	8.0	99.4
	16.0	1	.5	.6	100.0
	Total	174	94.1	100.0	
Missing	999.0	11	5.9		
Total		185	100.0		

Annex B – Complete data about the question "How many days per year do you do birdwatching on average?"

How many days per year do you do birdwatching on average?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	6	3.2	3.6	3.6
	1	3	1.6	1.8	5.4
	2	13	7.0	7.8	13.2
	3	5	2.7	3.0	16.2
	4	2	1.1	1.2	17.4
	5	10	5.4	6.0	23.4
	6	1	.5	.6	24.0
	7	4	2.2	2.4	26.3
	10	21	11.4	12.6	38.9
	12	1	.5	.6	39.5
	14	2	1.1	1.2	40.7
	15	1	.5	.6	41.3
	20	6	3.2	3.6	44.9
	25	3	1.6	1.8	46.7
	30	16	8.6	9.6	56.3
	40	5	2.7	3.0	59.3
	50	11	5.9	6.6	65.9
	52	1	.5	.6	66.5
	56	1	.5	.6	67.1
	60	2	1.1	1.2	68.3
	75	2	1.1	1.2	69.5
	80	1	.5	.6	70.1
	99	1	.5	.6	70.7
	100	7	3.8	4.2	74.9
	120	1	.5	.6	75.4
	150	4	2.2	2.4	77.8
	200	5	2.7	3.0	80.8
	280	1	.5	.6	81.4
	300	5	2.7	3.0	84.4
	320	2	1.1	1.2	85.6
	340	1	.5	.6	86.2
	350	3	1.6	1.8	88.0
	360	7	3.8	4.2	92.2
	365	13	7.0	7.8	100.0
	Total	167	90.3	100.0	
Missing	999	18	9.7		
Total		185	100.0		

Annex C – The TES questionnaire

	Completely Disagree	Disagree	Indifferent	Agree	Completely Agree
The Earth is approaching the limit number of people it can support.	☐	☐	☐	■	☐
The balance of nature is very delicate and easily upset.	☐	☐	☐	☐	■
People have the right to modify the natural environment to suit their needs.	☐	■	☐	☐	☐
People were created to rule over the rest of nature.	■	☐	☐	☐	☐
When people interfere with nature it often produces disastrous consequences.	☐	☐	☐	■	☐
Plants and animals exist primarily to be used by people.	☐	■	☐	☐	☐
To maintain a healthy economic situation we will have to develop a 'steady state' economy where industrial growth is controlled.	☐	☐	☐	■	☐
People must live in harmony with nature in order to survive.	☐	☐	☐	☐	■
The Earth is like a spaceship with only limited room and resources.	☐	☐	☐	■	☐
People need not adapt to the natural environment because they can remake it to suit their needs.	☐	■	☐	☐	☐
There are limits to growth beyond which our industrialised society cannot expand.	☐	☐	☐	■	☐
People are severely abusing the environment.	☐	☐	☐	☐	■

■ Median response for all groups combined

Annex D – Levene test, Shapiro-Wilk test and Kolmogorov-Smirnov test for Hypothesis 1

Test of Homogeneity of Variances

How many days per year do you do birdwatching on average?

Levene Statistic	df1	df2	Sig.
12.085	3	163	.000

Tests of Normality

	Nationality	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
How many days per year do you do birdwatching on average?	Portuguese	.290	30	.000	.722	30	.000
	British	.327	66	.000	.647	66	.000
	Dutch	.300	29	.000	.710	29	.000
	Others	.266	42	.000	.713	42	.000

a. Lilliefors Significance Correction

Annex E – Levene test, Shapiro-Wilk test and Kolmogorov-Smirnov test for Hypothesis 2

Test of Homogeneity of Variances

If Yes, what maximum amount?

Levene Statistic	df1	df2	Sig.
.534	3	170	.660

Tests of Normality

	Nationality	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
If Yes, what maximum amount?	Portuguese	.221	29	.001	.926	29	.042
	British	.358	69	.000	.790	69	.000
	Dutch	.250	29	.000	.882	29	.004
	Others	.218	47	.000	.885	47	.000

a. Lilliefors Significance Correction

Annex F – Scheffe's Test as *post-hoc* for Hypothesis 2

Multiple Comparisons

Dependent Variable: Rank of Amount

Scheffe

(I) Nationality	(J) Nationality	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Portuguese	British	-49.937281*	9.778349	.000	-77.54841	-22.32615
	Dutch	-21.275862	11.603581	.342	-54.04090	11.48918
	Others	-14.921864	10.433617	.564	-44.38328	14.53955
British	Portuguese	49.937281*	9.778349	.000	22.32615	77.54841
	Dutch	28.661419*	9.778349	.038	1.05029	56.27255
	Others	35.015418*	8.356637	.001	11.41878	58.61206
Dutch	Portuguese	21.275862	11.603581	.342	-11.48918	54.04090
	British	-28.661419*	9.778349	.038	-56.27255	-1.05029
	Others	6.353999	10.433617	.946	-23.10741	35.81541
Others	Portuguese	14.921864	10.433617	.564	-14.53955	44.38328
	British	-35.015418*	8.356637	.001	-58.61206	-11.41878
	Dutch	-6.353999	10.433617	.946	-35.81541	23.10741

*. The mean difference is significant at the 0.05 level.

Appendices

Appendix 1: Questionnaire in English

UAlg FE
UNIVERSIDADE DO ALGARVE
FACULDADE DE ECONOMIA

Birdwatching in Ria Formosa Natural Park

This survey is part of a study for a dissertation integrated in a Master's program on Tourism Economics and Regional Development (University of the Algarve). Your participation is important to understand the practices, attitudes and needs of birdwatchers who visit Ria Formosa Natural Park.

Your answers will be confidential and used only for scientific purposes.

Thank you in advance for your help!

BIRDWATCHING IN THE RIA FORMOSA NATURAL PARK

Is this your first time in this park? ☐ Yes ☐ No

If No, how many times have you visited it previously? ☐ 1 - 2 ☐ 3 - 4 ☐ 5 +

Is birdwatching the main reason for you to visit this park? ☐ Yes ☐ No

If No, what is the main reason? _____

Are you on vacations in the Algarve? ☐ Yes ☐ No

If Yes, what is the duration (in days) of your stay? _____

Who are you travelling with?

☐ Alone ☐Family ☐ Friends ☐Other: _____

Have you ever done (your intent to do) birdwatching in other sites in the Algarve?

☐ Yes ☐ No **If Yes, where?** _____

Classify your overall satisfaction of the birdwatching experience in this park:

☐ Very unsatisfied ☐ Unsatisfied ☐ Not satisfied nor unsatisfied ☐ Satisfied ☐ Very satisfied

Do you intent do return to birdwatch in this park in the future? ☐ Yes ☐ No

Would you recommend this park for birdwatching to your friends and family? ☐ Yes ☐ No

Suppose a fund would be raised to improve birdwatching facilities in the Ria Formosa Natural Park.

This would include:

- More and improved observatories;
- Information panels and travel guides;
- Availability of binoculars and field guides.

Assume that this fund would be financed by collecting an entrance fee to Quinta de Marim (this trail).

Would you be willing to pay a fee? ☐ Yes ☐ No **If Yes, what maximum amount?** _____€

BIRDWATCHING BACKGROUND

Are you a member of any nature conservation organization? ☐ Yes ☐ No

If Yes, please state the name(s) of the organization(s) _____

Do you consider your knowledge of birds to be:

☐ Below the average ☐ Average ☐ Above average

Do you have specialist birdwatching gear? ☐ Yes ☐ No

If Yes, what gear do you have?

☐ Bird field guide ☐ Specialist binoculars

☐ Special camera ☐ Telescope

☐ Other special equipment _____

How many days per year do you do birdwatching on average? _____

When you travel on vacations do you do birdwatching? ☐ Yes ☐ No

ENVIRONMENTAL AWARENESS

Do you agree or disagree that:

	Completely disagree	Disagree	Indifferent	Agree	Completely agree
The Earth is approaching the limit number of people it can support.					
The balance of nature is very delicate and easily upset.					
People have the right to modify the natural environment to suit their needs.					
People were created to rule over the rest of nature.					
When people interfere with nature it often produces disastrous consequences.					
Plants and animals exist primarily to be used by people.					
To maintain a healthy economic situation we will have to develop a 'steady state' economy where industrial growth is controlled.					
People must live in harmony with nature in order to survive.					
The Earth is like a spaceship with only limited room and resources.					
People need not adapt to the natural environment because they can remake it to suit their needs.					
There are limits to growth beyond which our industrialised society cannot expand.					
People are severely abusing the environment.					

BACKGROUND INFORMATION

Nationality: _____

Country of residence: _____ **If Portugal please mention the district:** _____

Gender: □ Male □ Female **Age:** _____

Marital status: _____ **Number of children:** _____

Indicate your highest educational qualification:

□ Basic school □ High school □ Bachelor's Degree

□ Master's Degree □ Doctor Degree □ Other: _____

Professional Status:

□ Entrepreneur □ Retired

□ Employed working for others (State) □ Student

□ Employed working for others (Private sector) □ Unemployed

□ Other: _____

What is your individual net monthly income in Euros? (Note: This is confidential and for scientific research only)

□ Less than 1000 € □ 1001 – 2000 € □ 2001 - 3000 €

□ 3001 – 4000 € □ 4001 – 5000 € □ More than 5000 €

Appendix 2: Questionnaire in Portuguese

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FACULDADE DE ECONOMIA

Birdwatching no Parque Natural da Ria Formosa

Este questionário faz parte de uma dissertação integrada no Mestrado em Economia do Turismo e Desenvolvimento Regional (Universidade do Algarve). O seu contributo é importante para perceber as práticas, atitudes e necessidades de quem pratica observação de aves no Parque Natural da Ria Formosa.

As repostas são confidenciais e serão usadas exclusivamente para fins científicos.

Obrigada pelo seu contributo!

OBSERVAÇÃO DE AVES NO PARQUE NATURAL DA RIA FORMOSA

É a primeira vez que visita este parque? □ Sim □ Não

Se respondeu Não, quantos vezes o visitou anteriormente? □ 1 - 2 □ 3 - 4 □ 5 ou +

O principal motivo da sua visita a este parque é a observação de aves? □ Sim □ Não

Se respondeu Não, qual é o principal motivo da sua visita? _____

Está de férias no Algarve? □ Sim □ Não

Se Sim, qual a duração (em dias) destas férias: _____

Com quem está a visitar o parque?

□ Sozinho □ Família □ Amigos □ Outro: _____

Já praticou ou pretende praticar observação de aves noutros locais do Algarve?

□ Sim □ Não **Se Sim, onde?** _____

Classifique o seu nível de satisfação com a experiência de observação de aves neste parque:

□ Muito insatisfeito □ Insatisfeito □ Indiferente □ Satisfeito □ Muito satisfeito

No futuro, tem intenção de regressar a este parque para praticar observação de aves?

□ Sim □ Não

Recomendaria este parque para a prática da observação de aves a amigos e familiares? □ Sim □ Não

Suponha que iria ser criado um fundo para melhorar as condições para a prática da observação de aves no Parque Natural da Ria Formosa.

As melhorias incluiriam:

- Mais e melhores observatórios;
- Painéis informativos nos percursos e edição de guias de viagem;
- Disponibilidade de binóculos e guias de campo.

Assuma que este fundo seria financiado através de uma taxa de entrada na Quinta de Marim.

Estaria disposto a pagar essa taxa? □ Sim □ Não

Se respondeu Sim, qual o preço máximo que estaria disposto a pagar?_____

EXPERIÊNCIA EM OBSERVAÇÃO DE AVES

É sócio de alguma associação de ambiente? ☐ Sim ☐ Não

Se respondeu Sim, qual (quais)? _____

Considera que o seu conhecimento sobre aves se situa:

☐ Abaixo da média ☐ Na média ☐ Acima da média

Possui equipamento especial para a prática da observação de aves? ☐ Sim ☐ Não

Se respondeu Sim, que equipamento possui?

☐ Guia de aves ☐ Binóculos

☐ Máquina fotográfica especial ☐ Telescópio

☐ Outros _____

Em média, quanto dias por ano faz observação de aves? _____

Quando viaja em turismo faz observação de aves? ☐ Sim ☐ Não

CONSCIÊNCIA AMBIENTAL

Concorda ou discorda que:

	Discordo totalmente	Discordo	Indiferente	Concordo	Concordo totalmente
Estamos a chegar ao número máximo de pessoas que a Terra pode suportar.					
O equilíbrio da natureza é muito delicado e facilmente abalável.					
Os seres humanos têm o direito de modificar a natureza para suportar as suas necessidades.					
O ser humano foi feito para governar sobre o resto da natureza.					
A interferência das pessoas com a natureza produz muitas vezes consequências desastrosas.					
As plantas e os animais existem, em primeiro lugar, para os seres humanos os usarem.					
Para manter uma situação económica estável e saudável é necessário um crescimento industrial controlado.					
Os seres humanos devem viver em harmonia com a natureza para garantir a sua sobrevivência.					
A Terra é como uma nave-espacial com espaço e recursos limitados.					
Os seres humanos não precisam de se adaptar ao meio ambiente porque conseguem refazê-lo para satisfazer as suas necessidades.					
Existem limites de crescimento para lá dos quais a nossa sociedade industrializada não se pode expandir.					
Os seres humanos estão a explorar abusivamente o meio ambiente.					

CARACTERIZAÇÃO SOCIO-ECONÓMICA

Nacionalidade: _____

País de residência: _____ **Se vive em Portugal diga o distrito:**_____

Género: ☐ Masculino ☐ Feminino **Idade:** _____

Estado civil: _____ **Número de filhos:** _____

Formação académica:

☐ 1º Ciclo (4ª classe) ☐ Secundário ☐ Bacharelato/Licenciatura

☐ Mestrado/Pós-graduação ☐ Doutoramento ☐ Outro: _____

Situação Profissional:

☐ Trabalhador por conta própria ☐ Reformado

☐ Trab. por conta de outrem (Estado) ☐ Estudante

☐ Trab. por conta de outrem (Privado) ☐ Desempregado

☐ Outro: _____

Qual é o seu rendimento líquido mensal (Euros)? (Nota: Esta informação é confidencial e apenas para investigação cientifica)

☐ Menos de 1000€ ☐ 1001 – 2000 € ☐ 2001 - 3000 €

☐ 3001 – 4000€ ☐ 4001 – 5000 € ☐ Mais de 5000 €

Appendix 3: Questionnaire in Spanish

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UNIVERSIDADE DO ALGARVE
FACULDADE DE ECONOMIA

Observación de Aves en el Parque Natural de la Ría Formosa

Este cuestionario forma parte de un trabajo Fin de Máster en Economía del Turismo y Desarrollo Regional (Universidad del Algarve). Su contribución es importante para comprender las prácticas, actitudes y necesidades de quien practica observación de aves en el Parque Natural de la Ría Formosa.

Las respuestas son confidenciales y serán utilizadas exclusivamente para fines científicos.

¡Gracias por su contribución!

OBSERVACIÓN DE AVES EN EL PARQUE NATURAL DE LA RÍA FORMOSA

¿Es la primera vez que visita este Parque? □ Sí □ No

Si respondió No, ¿cuántas veces lo había visitado con anterioridad? □ 1 - 2 □ 3 - 4 □ 5 o +

¿El principal motivo de su visita a este Parque es la observación de aves? □ Sí □ No

Si respondió No, ¿cuál es el principal motivo de su visita? _____

¿Está de vacaciones en el Algarve? □ Sí □ No

Si respondió Sí, ¿cuál es la duración (en días) de estas vacaciones? _____

¿Con quién está visitando el Parque?

□ Solo/a □ Familia □ Amigos □ Otro: _____

¿Ya ha practicado o pretende practicar observación de aves en otras zonas del Algarve?

□ Sí □ No **Si respondió Sí, ¿dónde?** _____

Clasifique su nivel de satisfacción con la experiencia de observación de aves en este Parque:

□ Muy insatisfecho □ Insatisfecho □ Indiferente □ Satisfecho □ Muy satisfecho

En el futuro, ¿tiene intención de regresar a este Parque para practicar observación de aves?

□ Sí □ No

¿Recomendaría este Parque para la práctica de observación de aves a amigos y familiares? □ Sí □ No

Suponga que va a ser creado un fondo para mejorar las condiciones para la práctica de observación de aves en el Parque Natural de la Ría Formosa.

Las mejoras incluirían:

- Más y mejores observatorios;
- Paneles informativos en las rutas y edición de guías de viaje;
- Disponibilidad de prismáticos y guías de campo.

Suponga que este fondo sería financiado a través de una tasa de entrada en la Quinta de Marim (esta ruta).

¿Estaría dispuesto a pagar esa tasa? □ Sí □ No

Si respondió Sí, ¿cuál es el precio máximo que estaría dispuesto a pagar?_____

Experiencia en Observación de Aves

¿Es socio de alguna asociación ambiental? ☐ Sí ☐ No

Si respondió Sí, ¿ cuál /es)? _____

Considera que su conocimiento sobre aves se sitúa:

☐ Por debajo de la media ☐ En la media ☐ Por encima de la media

¿Posee equipamiento especial para la práctica de la observación de aves? ☐ Sí ☐ No

Si respondió Sí, ¿qué equipamiento posee?

☐ Guía de aves ☐ Prismáticos

☐ Cámara de fotos especial ☐ Telescopio

☐ Otros _____

Por media, ¿cuántos días por año hace observación de aves? _____

¿Cuando viaja por turismo realiza observación de aves? ☐ Sí ☐ No

Conciencia Ambiental

Está de acuerdo o en desacuerdo con las siguientes afirmaciones:

	Totalmente en desacuerdo	En desacuerdo	Indiferente	De Acuerdo	Totalmente de acuerdo
Estamos alcanzado el número máximo de personas que la Tierra puede soportar.					
El equilibrio de la naturaleza es muy delicado y fácilmente alterable.					
Los seres humanos tienen derecho a modificar la naturaleza para soportar sus necesidades.					
El ser humano existe para gobernar sobre el resto de la naturaleza.					
La interferencia de las personas con la naturaleza tiene muchas veces consecuencias desastrosas.					
Las plantas y los animales existen, en primer lugar, para ser usados por los humanos.					
Para mantener una situación económica estable y saludable es necesario un crecimiento industrial controlado.					
Los seres humanos deben vivir en armonía con la naturaleza para garantizar su supervivencia.					
La Tierra es como una nave espacial con espacio y recursos limitados.					
Los seres humanos no necesitan adaptarse al medio ambiente porque consiguen modificarlo para satisfacer sus necesidades.					
Existen limites de crecimiento más allá de los cuales nuestra sociedad industrializada no puede expandirse.					
Los seres humanos están explotando el medio ambiente de forma abusiva.					

CARACTERIZACIÓN SOCIOECONÓMICA

Nacionalidad: _____

País de residencia: _____

Si vive en Portugal, especifique en qué distrito:_____

Género: □ Masculino □ Femenino **Edad:** _____

Estado civil: _____ **Número de hijos:** _____

Formación académica:

□ Graduado escolar □ Bachillerato □ Diplomatura/ Licenciatura

□ Máster/Post-universitario □ Doctorado □ Otro: _____

Situación Profesional:

□ Trabajador autónomo □ Jubilado

□ Empleado público (Funcionario) □ Estudiante

□ Trabajador por cuenta ajena □ Desempleado

□ Otro: _____

¿ Cuál es su rendimiento líquido mensual (Euros)? (Nota: Esta información es confidencial y apenas para investigación científica)

□ Menos de 1000 € □ 1001 – 2000 € □2001 - 3000 €

□ 3001 – 4000 € □ 4001 – 5000 € □ Más de 5000 €

Appendix 4: Questionnaire in Dutch

UAlg FE
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FACULDADE DE ECONOMIA

Vogelen in het natuur gebied van Ria Formosa

Deze vragenlijst is onderdeel van een proefschrift van een master in toerisme economie en regionale ontwikkeling aan de universiteit van de Algarve. Uw medewerking is van groot belang om meer te begrijpen over ontwikkeling, gedrag en behoeftes van vogelaars in het gebied van Ria Formosa.
De antwoorden zijn vertrouwelijk en worden uitsluitend gebruikt voor wetenschappelijke doeleinden.

Bedankt voor uw medewerking!

VOGELEN IN HET NATUUR GEBIED VAN RIA FORMOSA

Is dit de eerste keer dat u het park bezoekt? □ Ja □ Nee

Als u nee heeft geantwoord, hoe vaak bent u er al geweest? □ 1 - 2 □ 3 - 4 □ 5 +

Is het hoofd doel van uw bezoek vogelen? □ Ja □ Nee

Als u nee hebt geantwoord, wat is uw hoofd doel? _____

Bent u op vakantie in de algarve? □ Ja □ Nee

Zo ja, hoelang duurt uw bezoek?(dagen) _____

Met wie bezoekt u het park?

□ Alleen □ Met familie □ Met vrienden □ Anders : _____

Heeft u al, of bent u van plan om op andere plekken in de algarve te vogelen? □ Ja □ Nee

Zo ja, waar?_____

Wat is uw mate van tevredenheid over het vogelen in dit gebied:

□ Zeer ontevreden □ Ontevreden □ Geen mening □ Tevreden □ Zeer tevreden

Bent u van plan om in de toekomst nog terug te komen naar het gebied om te vogelen? □ Ja □ Nee

Zou u dit gebied aan familie of vrienden aanbevelen om te vogelen? □ Ja □ Nee

Veronderstel dat er een fonds zou komen om het vogelen in het gebied te verbeteren.

De verbeteringen:

- Meer en betere vogelkijkhutten;
- Informatie panelen en een reis gids;
- Beschikbaar stellen van verrekijkers en vogel boeken.

Er vanuit gaande dat dit fonds gefinancierd zou worden door het heffen van entree om het gebied binnen te mogen.

Zou u bereid zijn om toegang te betalen? □ Ja □ Nee Zo ja, hoeveel _____€

ERVARING IN HET VOGELEN

Bent u lid van natuur verenigingen? ☐ Ja ☐ Nee

Zo ja, welke? _____

Vindt u dat uw kennis van vogels:

☐ Onder gemiddeld ☐ Gemiddeld ☐ Boven gemiddeld

Heeft u speciale apparatuur om vogels te kijken? ☐ Ja ☐ Nee

Zo ja, wat voor apparatuur:

- ☐ Vogel boek ☐ Verrekijker
- ☐ Speciaal fototoestel ☐ Telescoop
- ☐ Anders: _____

Hoeveel dagen vogelt u gemiddeld per jaar? _____

Als u in uw vrije tijd reist gaat u dan vogelen? ☐ Ja ☐ Nee

MILIEU BEWUSTZIJN

In hoeverre bent u het eens met de volgende stellingen:

	helemaal oneens	Oneens	Geen mening	Eens	Helemaal mee eens
We zijn bijna bij de hoeveelheid mensen gekomen die de wereld aan kan.					
Het evenwicht in de natuur is erg kwetsbaar en makkelijk te verstoren.					
De mensen hebben het recht om de natuur te veranderen om aan hun eisen te voldoen.					
De mens is gemaakt om de baas te spelen over de rest van de natuur.					
De inmenging van de mens heeft vaak noodlottige gevolgen voor de natuur.					
Planten en dieren bestaan, in de eerste plaats om gebruikt te worden door de mensen.					
Om een gezonde economische situatie te hebben is het nodig dat er een gecontroleerde industriële groei plaatsvind.					
De mens moet in harmonie met de natuur leven om zijn overleving te waarborgen.					
De aarde is als een ruimtevaartuig met beperkte ruimte en middelen.					
De mens hoeft zich niet aan te passen aan zijn omgeving omdat hij deze kan maken naar zijn/ haar eisen.					
Er zijn grenzen voor de groei van onze geïndustrialiseerde maatschappij.					
De mens is het milieu aan het misbruiken en uitbuiten.					

SOCIAAL – ECONOMISCHE ACHTERGROND

Nationaliteit: _____

Land waar u woonachtig bent: _____

Als u in Portugal woont, in welke gemeente: _____

Geslacht: □ Man □ Vrouw **Leeftijd:** _____

Burgerlijke staat: _____ **Aantal kinderen:** _____

Opleiding:

□ Lagere school □ Middelbare school □ Minor

□ Master □ Doctoraal □ Anders: _____

Huidig dienstverband/ werk:

□ Zzp(zelfstandig zonder personeel) □ Met pensioen

□ In dienst (overheid) □ Student

□ In dienst (privé sector) □ Werkeloos

□ Anders: _____

Wat is uw netto maandelijks inkomen (in euro's).

□ Minder dan 1000 € □ 1001 – 2000 € □ 2001 - 3000 €

□ 3001 – 4000 € □ 4001 – 5000 € □ Meer dan 5000 €